#7

SEQUENCE LISTING

<110> PRODIGENE, INC.

<120> COMMERCIAL PRODUCTION OF LACCASE IN PLANTS

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<150> 60/103,301
<151> 1998-10-05

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<170> PatentIn Ver. 2.0

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ccc gac ggc ttc ctt cgg gat gcc atc gtg gtc aac ggc gtg gtc cct   96
Pro Asp Gly Phe Leu Arg Asp Ala Ile Val Val Asn Gly Val Val Pro
             20                  25                  30

tcc ccg ctc atc acc ggg aag aag gga gac cgc ttc cag ctc aac gtc   144
Ser Pro Leu Ile Thr Gly Lys Lys Gly Asp Arg Phe Gln Leu Asn Val
         35                  40                  45

gtc gac acc ttg acc aac cac agc atg ctc aag tcc act agt atc cac   192
Val Asp Thr Leu Thr Asn His Ser Met Leu Lys Ser Thr Ser Ile His
     50                  55                  60

tgg cac ggc ttc ttc cag gca ggc acc aac tgg gca gac gga ccc gcg   240
Trp His Gly Phe Phe Gln Ala Gly Thr Asn Trp Ala Asp Gly Pro Ala
 65                  70                  75                  80

ttc gtc aac cag tgc cct att gct tcc ggg cat tca ttt ctg tac gac   288
Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu Tyr Asp
                 85                  90                  95

ttc cat gtg ccc gac cag gca gga acg ttc tgg tac cac agt cat ctg   336
Phe His Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser His Leu
            100                 105                 110

tct acg caa tac tgt gac ggg ctg cga gga ccg ttc gtc gtg tac gac   384
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Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val Tyr Asp
        115                 120                 125

ccc aag gat ccg cac gcc agc cgc tac gat gtt gac aac gag agc acg   432
Pro Lys Asp Pro His Ala Ser Arg Tyr Asp Val Asp Asn Glu Ser Thr
    130                 135                 140

gtc atc acg ttg acc gac tgg tac cac acc gct gcc cgg ctc ggt ccc   480
Val Ile Thr Leu Thr Asp Trp Tyr His Thr Ala Ala Arg Leu Gly Pro
145                 150                 155                 160

agg ttc cca ctc ggc gcg gac gcc acg ctc atc aat ggt ctt ggg cgg   528
Arg Phe Pro Leu Gly Ala Asp Ala Thr Leu Ile Asn Gly Leu Gly Arg
                165                 170                 175

tcg gcc tcc act ccc acc gcc gcg ctt gct gtg atc aac gtc cag cac   576
Ser Ala Ser Thr Pro Thr Ala Ala Leu Ala Val Ile Asn Val Gln His
            180                 185                 190

gga aag cgc tac cgc ttc cgt ctc gtt tcg atc tcg tgc gac ccg aac   624
Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Ile Ser Cys Asp Pro Asn
        195                 200                 205

tac acg ttc agc atc gac ggg cac aat ctg acc gtc atc gag gtc gac   672
Tyr Thr Phe Ser Ile Asp Gly His Asn Leu Thr Val Ile Glu Val Asp
    210                 215                 220

ggt atc aac agc cag cct ctc ctt gtc gac tct atc cag atc ttc gcc   720
Gly Ile Asn Ser Gln Pro Leu Leu Val Asp Ser Ile Gln Ile Phe Ala
225                 230                 235                 240

gcg cag cgc tac tcc ttt gtg ttg aat gcg aac caa acg gtc ggc aac   768
Ala Gln Arg Tyr Ser Phe Val Leu Asn Ala Asn Gln Thr Val Gly Asn
                245                 250                 255

tac tgg gtc cgc gcg aac ccg aac ttc gga acg gtt ggg ttc gcc ggg   816
Tyr Trp Val Arg Ala Asn Pro Asn Phe Gly Thr Val Gly Phe Ala Gly
            260                 265                 270

ggg atc aac tcc gcc atc ctg cgc tac caa ggc gca cca gtc gcc gag   864
Gly Ile Asn Ser Ala Ile Leu Arg Tyr Gln Gly Ala Pro Val Ala Glu
        275                 280                 285

ccc act acg acc cag acg acg tcg gtg atc ccg ctt atc gag acg aac   912
Pro Thr Thr Thr Gln Thr Thr Ser Val Ile Pro Leu Ile Glu Thr Asn
    290                 295                 300

ttg cac ccc ctc gct cgc atg cct gtg cct ggc agc ccg aca ccc ggg   960
Leu His Pro Leu Ala Arg Met Pro Val Pro Gly Ser Pro Thr Pro Gly
305                 310                 315                 320

ggc gtc gac aag gcg ctc aac ctc gcg ttt aac ttc aac ggc acc aac   1008
Gly Val Asp Lys Ala Leu Asn Leu Ala Phe Asn Phe Asn Gly Thr Asn
                325                 330                 335

ttc ttc atc aac aac gcg act ttc acg ccg ccg acc gtc ccg gta ctc   1056
Phe Phe Ile Asn Asn Ala Thr Phe Thr Pro Pro Thr Val Pro Val Leu
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            340                 345                 350

ctc cag att ctg agc ggt gcg cag acc gca caa gac ctg ctc cct gca   1104
Leu Gln Ile Leu Ser Gly Ala Gln Thr Ala Gln Asp Leu Leu Pro Ala
        355                 360                 365

ggc tct gtc tac ccg ctc ccg gcc cac tcc acc atc gag atc acg ctg   1152
Gly Ser Val Tyr Pro Leu Pro Ala His Ser Thr Ile Glu Ile Thr Leu
    370                 375                 380

ccc gcg acc gcc ttg gcc ccg ggt gca ccg cac ccc ttc cac ctg cac   1200
Pro Ala Thr Ala Leu Ala Pro Gly Ala Pro His Pro Phe His Leu His
385                 390                 395                 400

ggt cac gcc ttc gcg gtc gtt cgc agc gcg ggg agc acc acg tat aac   1248
Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Thr Thr Tyr Asn
                405                 410                 415

tac aac gac ccg atc ttc cgc gac gtc gtg agc acg ggc acg ccc gcc   1296
Tyr Asn Asp Pro Ile Phe Arg Asp Val Val Ser Thr Gly Thr Pro Ala
            420                 425                 430

gcg ggc gac aac gtc acg atc cgc ttc cag acg gac aac ccc ggg ccg   1344
Ala Gly Asp Asn Val Thr Ile Arg Phe Gln Thr Asp Asn Pro Gly Pro
        435                 440                 445

tgg ttc ctc cac tgc cac atc gac ttc cac ctc gac gcg ggc ttc gcg   1392
Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
    450                 455                 460

atc gtg ttc gca gag gac gtt gcg gac gtg aag gcg gcg aac ccg gtt   1440
Ile Val Phe Ala Glu Asp Val Ala Asp Val Lys Ala Ala Asn Pro Val
465                 470                 475                 480

ccg aag gcg tgg tcg gac ctg tgc ccg atc tac gac ggg ctg agc gag   1488
Pro Lys Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Gly Leu Ser Glu
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Ala Asn Gln
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Pro Asp Gly Phe Leu Arg Asp Ala Ile Val Val Asn Gly Val Val Pro
             20                  25                  30

Ser Pro Leu Ile Thr Gly Lys Lys Gly Asp Arg Phe Gln Leu Asn Val
         35                  40                  45
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Val Asp Thr Leu Thr Asn His Ser Met Leu Lys Ser Thr Ser Ile His
    50                  55                  60

Trp His Gly Phe Phe Gln Ala Gly Thr Asn Trp Ala Asp Gly Pro Ala
 65                  70                  75                  80

Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu Tyr Asp
                85                  90                  95

Phe His Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser His Leu
            100                 105                 110

Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val Tyr Asp
        115                 120                 125

Pro Lys Asp Pro His Ala Ser Arg Tyr Asp Val Asp Asn Glu Ser Thr
    130                 135                 140

Val Ile Thr Leu Thr Asp Trp Tyr His Thr Ala Ala Arg Leu Gly Pro
145                 150                 155                 160

Arg Phe Pro Leu Gly Ala Asp Ala Thr Leu Ile Asn Gly Leu Gly Arg
                165                 170                 175

Ser Ala Ser Thr Pro Thr Ala Ala Leu Ala Val Ile Asn Val Gln His
            180                 185                 190

Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Ile Ser Cys Asp Pro Asn
        195                 200                 205

Tyr Thr Phe Ser Ile Asp Gly His Asn Leu Thr Val Ile Glu Val Asp
    210                 215                 220

Gly Ile Asn Ser Gln Pro Leu Leu Val Asp Ser Ile Gln Ile Phe Ala
225                 230                 235                 240

Ala Gln Arg Tyr Ser Phe Val Leu Asn Ala Asn Gln Thr Val Gly Asn
                245                 250                 255

Tyr Trp Val Arg Ala Asn Pro Asn Phe Gly Thr Val Gly Phe Ala Gly
            260                 265                 270

Gly Ile Asn Ser Ala Ile Leu Arg Tyr Gln Gly Ala Pro Val Ala Glu
        275                 280                 285

Pro Thr Thr Thr Gln Thr Thr Ser Val Ile Pro Leu Ile Glu Thr Asn
    290                 295                 300

Leu His Pro Leu Ala Arg Met Pro Val Pro Gly Ser Pro Thr Pro Gly
305                 310                 315                 320

Gly Val Asp Lys Ala Leu Asn Leu Ala Phe Asn Phe Asn Gly Thr Asn
                325                 330                 335

Phe Phe Ile Asn Asn Ala Thr Phe Thr Pro Pro Thr Val Pro Val Leu
            340                 345                 350
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Leu Gln Ile Leu Ser Gly Ala Gln Thr Ala Gln Asp Leu Leu Pro Ala
355 360 365

Gly Ser Val Tyr Pro Leu Pro Ala His Ser Thr Ile Glu Ile Thr Leu
370 375 380

Pro Ala Thr Ala Leu Ala Pro Gly Ala Pro His Pro Phe His Leu His
385 390 395 400

Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Thr Thr Tyr Asn
405 410 415

Tyr Asn Asp Pro Ile Phe Arg Asp Val Val Ser Thr Gly Thr Pro Ala
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Ala Gly Asp Asn Val Thr Ile Arg Phe Gln Thr Asp Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Ile Val Phe Ala Glu Asp Val Ala Asp Val Lys Ala Ala Asn Pro Val
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Pro Lys Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Gly Leu Ser Glu
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Ala Asn Gln

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acaattacat atttacaaaa atgttttcta taaatattag atttagttcg tttatttgaa 180

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